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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,671	11/13/2003	Dmitri Simonian	P121US	9864

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REFLECTIVITY, INC.
350 POTRERO AVENUE
SUNNYVALE, CA 94085

EXAMINER	
TALBOT, BRIAN K	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,671	SIMONIAN ET AL.	
	Examiner	Art Unit	
	Brian K. Talbot	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39 and 43-83* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39 and 43-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *65-83* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The amendment filed 11/21/05 has been considered and entered. Claims 40-42 have been canceled. Claims 1-39 and 43-83 remain in the application.

2. This application contains claims 65-83 drawn to an invention nonelected with traverse in Paper filed 6/8/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. In light of the amendment filed 11/21/05, the 35 USC 112 rejections have been withdrawn.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

6. Claims 1-4,8-18,20 and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950).

Ashurst et al., Wafer level anti-stiction coating for MEMS" teaches applying dichlorodimethylsilane (DDMS) anti-stiction coating on MEMS devices (abstract). Silicon samples are rinsed in acetone and cleaned with UV and ozone (UVO), treated with HF and UVO cleaned again prior to depositing the DDMS coating thereon. The pressure is reduced to less than 10 mTorr for plasma UVO cleaning. Water gas is also utilized during the cleaning process. Next the chamber pressure raised and DDMS is introduced to form the anti-stiction layer (pgs. 8-9). Hydrogen peroxide is also taught as a known cleaning agent for silicon surface prior to forming anti-stiction coatings (pg. 4)

Ashurst et al., Wafer level anti-stiction coating for MEMS" fails to teach cleaning the MEMS with ozone without the use of UV.

Zazerra et al. (6,537,380) teaches a composition containing a fluorinated solvent, ozone and optionally a co-solvent and the use of these for cleaning an oxidizing substrates (abstract). The substrate comprises silicon and is found in MEMS devices. The composition can effectively remove residues or particulates prior to coating (col. 3, line 1-40). Co-solvents of the cleaning solution include acetic acid (col. 4, lines 30-40).

Chinn et al. (6,830,950) teaches pre-treating surfaces of MEMS structure with a plasma generated source gas comprising oxygen and optionally hydrogen (abstarct).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" pre-treating process by treating the MEMS device with ozone absent UV assistance with the expectation of achieving similar results as evidenced by Zazerra et al. (6,537,380) or Chinn et al. (6,830,950).

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) further in combination with Wallace et al. (5,512,374).

Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) fail to teach the anti-stiction coating being perfluoropolyether.

Wallace et al. (5,512,374) teaches perfluoropolyether coating for eliminating sticking and adhesion in MEMS devices (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) process by substituting on anti-stiction agent (DDMS) for another (PPFE) with the expectation of achieving similar success as evidenced by Wallace et al. (5,512,374).

Claims 6,7,28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al.

(6,537,380) or Chinn et al. (6,830,950) further in combination with Hornbeck (5,411,769) or Kobrin et al. (US 2005/0109277).

Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) fail to teach the temperature of the chamber.

Hornbeck (5,411,769) teaches method for cleaning MEMS devices and coating with anti-stiction coatings whereby the chamber is at a temperature of 80°C (col. 3, lines 35-45).

Kobrin et al. (US 2005/0109277) teaches substrate temperatures of up to 100°C [0013].

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" process by performing the treatment at the claimed temperatures as evidenced by Hornbeck (5,411,769) or Kobrin et al. (US 2005/0109277).

Claims 31-39 and 43-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) further in combination with Malone (6,951,769).

Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) fail to teach the MEMS device being placed in an assembly and then into the chamber for cleaning/coating.

Malone (6,951,769) teaches mounting MEMS devices on an assembly substrate and coupling an assembly lid to the assembly substrate and over the MEMS devices to create an interior of the MEMS device. The MEMS device can be contacted through an opening (abstract and Figs.).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) chamber to have placed the MEMS device in assembly for cleaning/coating as evidenced by Malone (6,951,769) with the expectation of achieving similar results

Response to Amendment

7. Applicant's arguments with respect to claims 1-39 and 43-64 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the prior art, Ashurst et al., "Wafer level anti-stiction coating for MEMS", teaches cleaning with ozone and UV. The claims no require absence of UV.

Zazerra et al. (6,537,380) or Chinn et al. (6,830,950) both teach cleaning treatments incorporating ozone and oxygen plasma without the need or recitation of UV. In addition, Ashurst et al., Wafer level anti-stiction coating for MEMS" teaches a plasma pre-treatment prior to coating with an anti-stiction coating, however, another process for pretreating includes the addition of UV. Hence, the use of oxygen treatment including ozone and plasma absent a recitation of UV is known by the prior art.

Applicant argued that prior art fails to teach assembling the MEMS device into an assembly and introducing the modifying agent into the assembly in a chamber.

Malone (6,951,769) teaches mounting MEMS devices on an assembly substrate and coupling an assembly lid to the assembly substrate and over the MEMS devices to create an interior of the MEMS device. The MEMS device can be contacted through an opening (abstract and Figs.).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B K Talbot 1/24/06

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT